



OVERVIEW OF NATIONAL AND STATE PERMITTING ISSUES

Colorado Geothermal Investors' Forum

Renewable Energy Forum & Expo

Montrose Pavilion

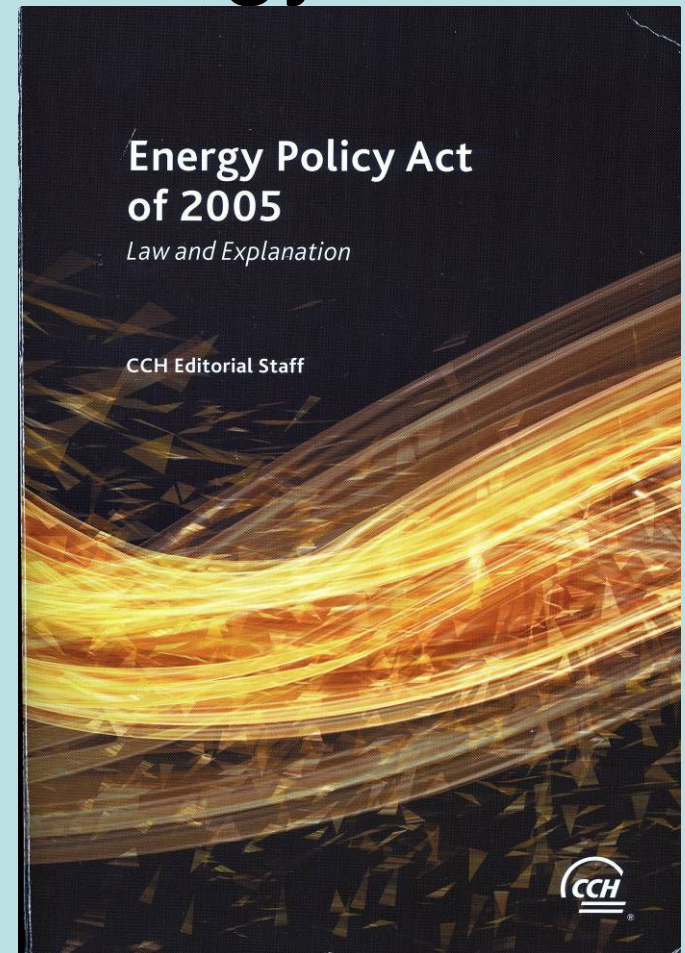
Montrose, Colorado

October 19, 2007

**U.S. Department of the Interior
Bureau of Land Management
Kermit Witherbee, Washington, DC
Duane Spencer, Lakewood, CO
Minerals Management Service
Herb Black, Lakewood, CO**

Geothermal Tasks – Energy Act

- **Published Proposed Geothermal Rule (Sec 221-236), July 21, 2006**
- **Completed Comment Period on Proposed Rule – Held Public meeting in Reno (Sec 221-236)**
- **Published Final Geothermal Rule (Sec 221-236), May 2, 2007**



Geothermal Tasks – Energy Act

- **Held Utah and Idaho Competitive Sale (Sec 222), June 20, 2007**
 - UT, 3 parcels, 6,018 ac, \$3.7m
 - ID, 5 parcels, 8,904 ac, \$5.7m
- **Held California and Nevada Sale (Sec 222), August 14, 2007**
 - CA, 6 parcels, 2711 ac, \$6.6m
 - NV, 32 parcels, 122,849 ac, \$11.7m



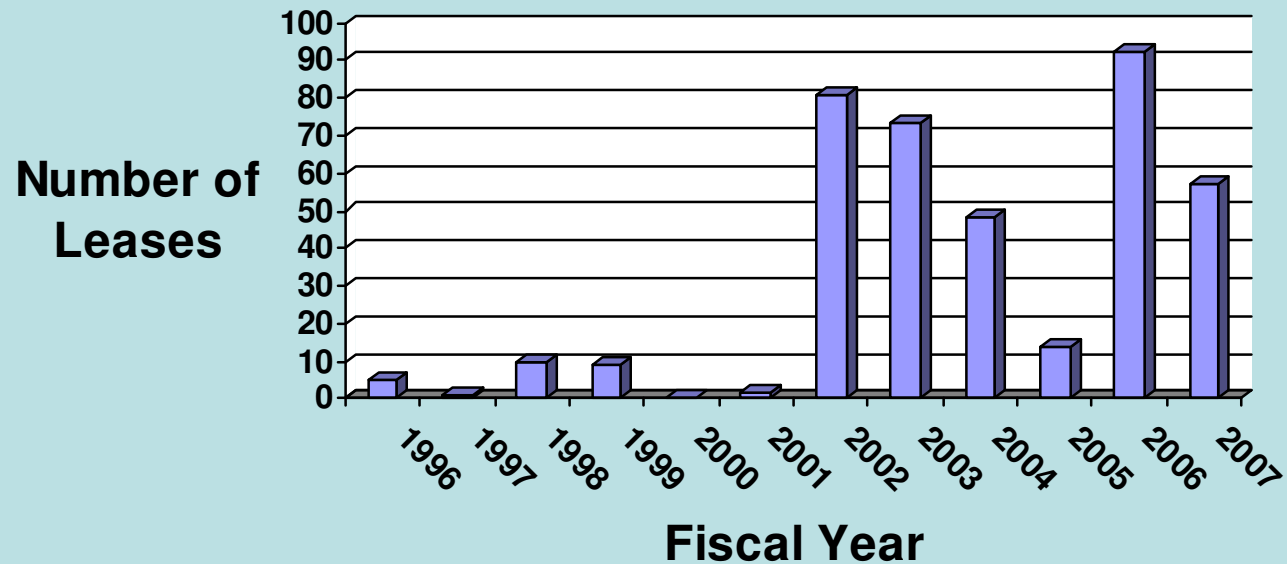
Geothermal Tasks – Energy Act

- **Coordination of Leasing & Permitting (Sec 225)-BLM/FS MOU, 4/14/2006**
- **Preparing Programmatic Geothermal EIS (Sec 225)-BLM/FS, DOE Cooperator, DEIS (2/2008)**
- **Established Treasury Account (Sec 234)**



BLM Geothermal Leasing

BLM Geothermal Leases Issued FY 1996-2007



Geothermal Leasing Process

Available Land

Nomination of Lands

Competitive Leasing

Noncompetitive Leasing

Direct Use Leasing

Lease Issuance

Available Land

- Lands administered by DOI
- Lands administered by the Department of Agriculture w/ its concurrence
- Lands conveyed to US where geothermal resources were reserved to US
- Lands subject to Sec. 24 of Federal Power Act, with DOE concurrence

Nomination of Lands

- Nomination Form 3203-10
 - One nomination per form
- Maximum Nomination Size
 - 5,120 Acres (unless includes irregular subdivision)
- Description of Lands Nominated
 - Public land system (T,R,S, & aliquot part)
 - Fractional interest lands (US mineral ownership as %)
- Nomination Filing Fee (43 CFR 3000.12)
 - \$100 per nomination + \$0.10 per acre
- Block Nominations
 - Parcels may be sold as a block that could be produced as 1 unit

Competitive Leasing

Lands Offered

- Nominated Lands

- BLM Motion

Lease Sale Notice

- The lease sale format and procedures

- The time, date and place of the lease sale

- Stipulations applicable to each parcel

- Published 45 days prior to sale (Post the Notice in the BLM office having jurisdiction over the lands to be offered)

- May be held in conjunction with oil & gas lease sale

Competitive Leasing (Cont'd)

Lease Sale Format

- Oral Bidding (Competitive bidding)
- Offered to Highest Qualified Bidder

Lease Issuance

Payments:

- Close of Official Business hour on day of sale Competitive Lease Application Fee (43 CFR 3000.1)

- 1st year's rental

- 20% of Bonus bid

- Within 15 calendar days after the last day of the sale: Balance of bonus bid

Noncompetitive Leasing

(Other than Direct Use Leasing)

- Lands Not Sold at Competitive Lease Sale
 - Available for period of two years (2 year window)
 - Beginning from first business day following sale
 - Applications only accepted for parcels as configured in Notice of Competitive Geothermal Lease Sale for 30 days after the sale (parcel integrity)
 - Applications for a specific parcel received on first business day after the sale – considered as simultaneously filed
 - One application per parcel, BLM will randomly select an application among those accepted to receive the lease
 - After 30 day (parcel integrity) period applicant may file for any available lands

Noncompetitive Leasing (Other than Direct Use Leasing)

Non-Competitive Leasing to a Mining Claimant

Submit Form 3200-24a, Offer to Lease and Lease for Geothermal Resources, two copies (one with original signature)

Provide documentation:

- Mining claim ownership

- Current approved plan of operations for the mine

Direct Use Leasing

Secretary of Interior may identify lands exclusively for direct use

File noncompetitive lease application (Form 3200-24a)

Acreage no larger than reasonably necessary to accommodate intended use

BLM posts application for 90 days

If competitive interest or nomination is received for competitive leasing, lands will be offered for competitive sale

State, Tribal or Local Governments-Use resource without sale & for public purposes other than commercial generation of electricity – nominal fee for use

Lease Issuance

- Applicant must:
 - Accept all lease terms
 - Make all required payments
 - Sign joinder or waiver (if applicable)
 - Comply with maximum limit on acreage holdings
 - 51,200 acres in any one state
 - Acreage included in an approved unit agreement, drilling contract, or development contract is not counted
- BLM Must:
 - Determine land is available
 - Determine that lease will not have a significant adverse impact on any significant thermal feature in specific units of the National Park Service
- Lease issued:
 - Day BLM signs lease, goes into effect first day of following month.

Lease Terms and Extensions

Lease Terms 43 CFR 3207

- Primary Term of the Lease - 10 years
- Initial Lease Extension of the Primary Term – Up to 5 years
- Addition Extension of the Primary Term – Up to 5 years
- Drilling Extension – 5 years
- Production Extension – up to 35 years

Primary Term

- Primary term of ten years
 - Work Requirements 43 CFR 3207.11
 - By the end of the 10 year, you must expend a minimum of \$40 per acre in development activities that perform addition geologic or reservoirexamples
 - Geologic investigation and analysis
 - Core drilling
 - Geochemical or geophysical surveys
 - Drilling production or injection wells
 - Reservoir testing
 - Drilling temp. gradient wells
 - Other activities approved by BLM
 - Or...

Primary Term

- Work Requirements 43 CFR 3207.11
- or...in lieu of work....make a payment to BLM of \$40 per acre
- Documentation of work, or payment in lieu of work must be submitted to BLM prior to end of the 10th year

Exemption: When lease overlies a mining claim with an approved Plan of Operation (POO), requirements do not apply. Lessee must provide documentation of POO and that geo lease operations would interfere with mining

Initial and Additional Extensions of the Primary Term 43 CFR 3207.12

- Extensions of up to 5 years each
- Work requirements
 - Minimum of \$15 per acre/per year under initial extension, \$25 under additional extension..
 - Excess may be carried over to another year within the extension
 - Work performed to establish geo. potential or confirm the existence of producible geothermal resources...activities including...

Initial and Additional Extensions

43 CFR 3207.12

- Work requirements..cont.
 - * Geologic investigation and analysis
 - * Drilling Temp. gradient wells
 - * Core drilling
 - * Geochemical or geophysical surveys
 - * Drilling production or injection wells
 - * Reservoir testing
 - * Other activities approved by BLM
-or

Initial and Additional Extensions

43 CFR 3207.12

- Make payments to BLM in lieu of work requirements of \$15 per acre/per year for initial extension, \$25 per acre/per year for additional extension
- However, BLM may limit the number of years it will accept payments in lieu of work...or
- Submit documentation of production or utilization of geothermal resources in commercial quantities

Initial and Additional Extensions

43 CFR 3207.12

- When to submit information or \$\$\$

Initial Extension

- 1.) 60 days after the end of years 11, 12, 13, and 14
- 2.) 60 days before the end of year 15

Additional Extension

- 1.) 60 days after the end of years 16, 17, 18, and 19

Initial and Additional Extensions

43 CFR 3207.12

- Annual Reports need to include a description of your activities by type, location, date(s) conducted, and dollar amount expended
- Annual Reports need to include all geologic information obtained from your activities
- Failure to comply with requirements... BLM will terminate lease at the end of the lease year

Initial and Additional Extensions

43 CFR 3207.12

Exemption: When lease overlies a mining claim with an approved Plan of Operation (POO), work requirements do not apply. Lessee must provide documentation of POO and that geo lease operations would interfere with mining

Drilling Extension

43 CFR 3207.14

- Lease will be extended for 5 years if at the end of the 10th year or any subsequent year of the initial or additional extension:
 - 1.) Commenced drilling of a well before the end of the year for the purpose of testing or producing a geothermal reservoir; and
 - 2.) Are diligently drilling to a target that BLM determines is adequate, based upon the geology and type of development you propose.

Production Extension

43 CFR 3207.15

- BLM will grant a production extension of up to 35 years if you are producing or utilizing geothermal resources in commercial quantities when BLM determines that:
 - well is actually producing geothermal resources in commercial quantities, or
 - well is capable of producing geo. resources in commercial quantities *and* you are diligent towards utilization of the resource..Diligence efforts must be demonstrated to BLM on an annual basis

Production Extension

43 CFR 3207.15

- Production extension will begin:

First day of the month following the end of the primary term(including the initial and additional extensions, or the drilling extension

Preferential Renewal

43 CFR 3207.16

- Renewal of lease for a second term of up to 55 years if, and the end of the production extension (43 CFR 3207.15) lease is producing or utilizing geothermal resources in commercial quantities..and land isn't needed for *any other purpose*..
- Lease must continue to be producing or utilizing geothermal resources in commercial quantities

Annual Rental Per Acre

	Existing	New Rule		
Lease Type		1 st Year	2 nd – 10 th year	11 th year on
Competitive	\$2	\$2	\$3	\$5
Non-Competitive	\$1	\$1		

Termination for Failure to Pay Rent

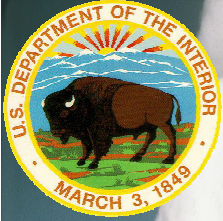
- ▶ Terminate: BLM will terminate if MMS does not receive rent plus applicable late fees in full by 45 days after anniversary.
- ▶ Reinstate: If lessee is notified later than 15 days after anniversary date BLM will reinstate if MMS receives rent + late fee within 30 days from receipt of notification.

Royalty Rates

Existing	New Rule		
10 – 15% of Value of Heat or Energy	Electrical Generation (lessee sale of electricity)		Direct Use
	1 st 10 years	11 th year on	
	1.75% of Gross Proceeds from Sale of Electricity	3.50% of Gross Proceeds from Sale of Electricity	MMS Fee Schedule
	Electrical Generation (lessee sale of resource)		
	10% of Gross Proceeds from Sale of Resource		

Rental and Royalty Payments (con't)

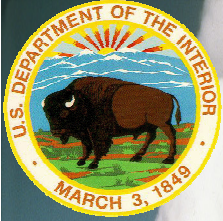
- ▶ Rental can be credited towards royalty
- ▶ Direct use fees are paid in addition to rental



Summary of MMS Geothermal Rulemaking

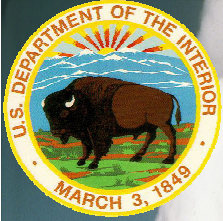
- The MMS published final geothermal valuation regulations on May 2, 2007 to implement the geothermal provisions of the Energy Policy Act of 2005 (EPAct) which will:
 - Simplify royalty calculations methods for geothermal resources produced from Federal leases used for commercial generation of electricity;
 - Provide a simplified valuation methodology for direct use leases.





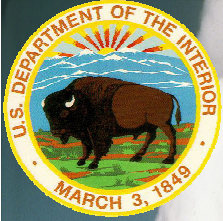
Summary of MMS Geothermal Rulemaking

- In conjunction with the publication of the MMS Geothermal Valuation Rule, the Bureau of Land Management (BLM) also published a final rule revising the BLM's existing geothermal resource leasing and unit agreement regulations to implement provisions of the Energy Policy Act.
- MMS Rule: 30 CFR Parts 202, 206, 210, 217, and 218
- BLM Rule: 43 CFR Parts 3000, 3200, and 3280



Summary of MMS Geothermal Rulemaking

- Identifies when credits against royalties are and are not allowable;
- Explains how and when to pay advanced royalties;
- Provides royalty reduction for existing leases that qualify for near term production incentives;
- Provides new Product Codes for reporting with the direct use fee schedule;
- Provides new Transaction Codes for in-kind deliveries of electricity to states or counties;



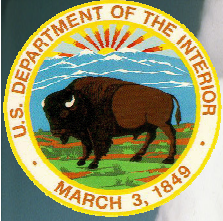
Summary of MMS Geothermal Rulemaking

- Identifies allowable deductions from royalty payments and how to calculate them;
- Amends, streamlines and re-writes the existing sections of the regulations, promulgated in 1991, in plain English; and
- Explains the new percent of gross proceeds royalty calculation method for electrical generation lessees and the new direct use fee schedule for direct use lessees.
- Explains new byproduct royalty calculation.



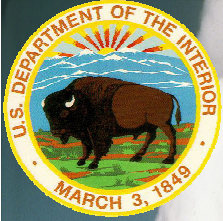
New MMS Lease Definitions

- **Class I lease-** Class I leases include both:
 - (a) Leases existing on August 8, 2005 (existing leases), for which the lessee has not converted the royalty terms under section 43 CFR 3212.25; and (b) Leases issued pursuant to lease applications pending on August 8, 2005, for which the lessee has not made an election under section 43 CFR 3200.8(b).
- Contains all the royalty provisions for existing leases: royalties, minimum royalties, rentals, byproduct royalty rates. The only new provisions that apply are the production incentives for new or qualified expansion production and credits for in kind delivery of electricity.



New MMS Lease Definitions

- **Class II lease-** A lease issued after the date of enactment of the EPOA (except for leases issued in response to an application pending on that date which the lessee does not convert to EPOA terms under 43 CFR 3200.8(b).
- Contains all new royalty rates, royalty calculations, direct use fees, new rental rates, rental credits to royalties, new byproduct royalty rates, credits for in-kind delivery of electricity, and advanced royalties.



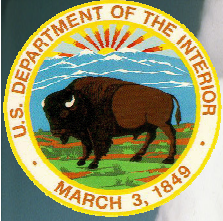
New MMS Lease Definitions

- **Class III lease-** A lease issued before the date of enactment of the EPOA that the lessee converts to EPOA royalty or direct use fee terms under 43 CFR 3212.25.
- BLM-determined lease royalty rate.
- Direct use fee schedule.
- BLM-determined byproduct royalty rates.



Commercial Generation of Electricity

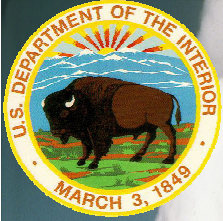
- The new rule establishes a new “percentage of gross proceeds from the sale of electricity” royalty method. (30 CFR 206.352)
- Current lessees have the option of staying on the current royalty calculation method (usually netback) or converting to the new percentage of gross proceeds method by December 1, 2008. (43 CFR 3212.26(b)(1))
- For lessees that elect to change their lease terms, royalty rates will be revised by BLM to maintain the same level of revenues that would have been received by MMS under the current regulations. (43 CFR 3211.17(b))
- All new leases will have royalty rates of 1.75% for the first 10 years, 3.5% thereafter. (43 CFR 3211.17(a))



Definition of Gross Proceeds

Gross proceeds- (for royalty payment purposes) means the total monies and other consideration accruing to a geothermal lessee for the sale of electricity or geothermal resource. (30 CFR 206.351)





Definition of Gross Proceeds

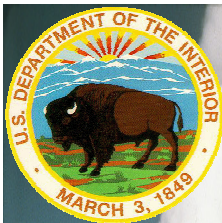
Gross proceeds- no royalty on:

- (1) unavoidably lost resources and resources reinjected before use;
- (2) resources used to generate “electricity for internal power plant operations” (referred to in the final rule as “plant parasitic electricity”);
- (3) resources used to generate electricity returned to the lease for lease operations; and
- (4) commercially demineralized water necessary for power plant operations or otherwise used on or for the benefit of the lease. (30 CFR 202.351)



Reporting of Gross Proceeds

- Report gross proceeds from the sale of electricity on MMS Form 2014 under “Sales Value” when using percent of gross proceeds royalty method.
- For netback, report net proceeds under “Sales Value”.
- See MMS Mineral Revenue Reporter Handbook, Chapter 7:
<http://www.mrm.mms.gov/ReportingServices/PDFDocs/RevenueHandbook.pdf>



Reporting of Gross Proceeds

Form MMS-2014
OMB Control Number 1010-0140
OMB Approval Expires 11/30/2009

U.S. DEPARTMENT OF THE INTERIOR
Minerals Management Service - Minerals Revenue Management

REPORT OF SALES AND ROYALTY REMITTANCE FORM MMS-2014

1 PAYOR NAME: _____

3 FEDERAL/INDIAN REPORT INDICATOR ☐ (F or I)

2 PAYOR CODE: _____

4 PAYOR-ASSIGNED
DOCUMENT NUMBER _____

PAGE ____ OF ____

5 LINE NUMBER	6 RESERVED FOR PREPARED'S USE	7 MMS LEASE NUMBER	10 PRODUCT CODE	11 SALES TYPE CODE	12 SALES MO/YR (MM/CCYY)	13 TRANSACTION CODE	14 ADJUSTMENT REASON CODE	15 SALES VOLUME (Mcft/bbl/gall/long ton)	16 GAS MMbtu	17 SALES VALUE \$	18 INTENTIONALLY LEFT BLANK	23 PAYMENT METHOD CODE
8 API WELL NUMBER	9 MMS AGREEMENT NUMBER							19 ROYALTY VALUE PRIOR TO ALLOWANCES \$	20 TRANSPORTATION ALLOWANCE DEDUCTION \$	21 PROCESSING ALLOWANCE DEDUCTION \$	22 ROYALTY VALUE LESS ALLOWANCES \$	
1												
2												
3												
4												

Gross proceeds here

I have read and examined the statements in this report and agree they are accurate and complete.

Authorized Name (print) and Signature _____ Date _____

If company contact information has changed, please indicate below: (Please print)

Contact Name _____ Phone Number _____

Street _____ P.O. Box _____ Suite or Other Identifier _____

City _____ State _____ Zip Code _____

Fax Number _____ Email Address _____

Form MMS-2014 (Rev. 9/8/2001)

PAYMENT INFORMATION

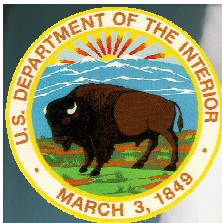
Checks To MMS (PM1) _____
*Indian Direct Pay (PM2) _____
EFT Payments (PM3) _____
*Royalty-In-Kind (PM4) _____
Checks To MMS For BIA (PM5) _____
Other (For Future Use) (PM6) _____
*Indian Lockbox (PM7) _____
Total All Payments: _____
Less Available Credits: (*Credits may not be applied to PM2, PM4, PM7)
Doc. ID: _____
Doc. ID: _____
Doc. ID: _____
Net Payment for this Report: _____

PAGE
TOTAL
REPORT
TOTAL



Direct Use

- The regulations establish a fee schedule, in lieu of royalties, for all new and converted geothermal leases that do not sell the geothermal resource and use it for a purpose other than commercial generation of electricity (direct use) (30 CFR 206.356).
- Current lessees have the option to stay on their existing royalty method or convert to the fee schedule within 18 months of the effective date of the fee schedule. (43 CFR 3212.26(c))

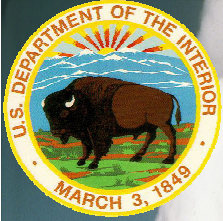


Direct Use Fee Schedule

Direct Use Fee Schedule (Hot Water)

If your average monthly inlet temperature (°F) is		Your fees are...	
above...	But not more than...	(\$/million gallons)	(\$/million pounds)
130	140	2.524	0.307
140	150	7.549	0.921
150	160	12.543	1.536
160	170	17.503	2.150
170	180	22.426	2.764
180	190	27.310	3.379
190	200	32.153	3.993
200	210	36.955	4.607
210	220	41.710	5.221
220	230	46.417	5.836
230	240	51.075	6.450
240	250	55.682	7.064
250	260	60.236	7.679
260	270	64.736	8.293
270	280	69.176	8.907
280	290	73.558	9.521
290	300	77.876	10.136
300	310	82.133	10.750
310	320	86.328	11.364
320	330	90.445	11.979
330	340	94.501	12.593
340	350	98.481	13.207
350	360	102.387	13.821

For direct use operations where the average monthly inlet temperature is 130°F or less, only the lease rental is due. The MMS, in consultation with BLM, will develop and publish a revised fee schedule in the **Federal Register**, as needed.



Direct Use Fee Schedule

- Two new product codes are added for the direct use fee schedule under new regulations:
- 45- Direct use, millions of gallons
- 46- Direct use, millions of pounds



Credits and Advanced Royalties- Electrical Generation

The new rule:

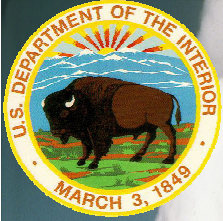
- Allows credits against royalty payments for annual rental payments for new and converted leases used for the commercial generation of electricity.
- Requires payment of advanced royalties for cessation of production on new and converted leases. These payments will be credited against royalties owed once production resumes.
- Allows all lessees a credit against royalties owed on geothermal resources for delivery of electricity “in-kind” to states and counties.



Byproducts

Royalty due on byproducts is determined by multiplying the royalty rate in your lease or that BLM prescribes under 43 CFR 3211.19 by a value of the byproducts determined in accordance with the first applicable of the following subparagraphs:

(1) The gross proceeds accruing to you from the arm's-length sale of the byproducts, less any applicable byproduct transportation allowances determined under 30 CFR 206.358 and 206.359;



Byproducts

(2) Other relevant matters including, but not limited to, published or publicly available spot-market prices, or information submitted by the lessee concerning circumstances unique to a particular lease operation or the saleability of certain byproducts; or

(3) Any other reasonable valuation method approved by MMS.



Credits for Delivery of Electricity In-Kind

- The MMS must approve in advance your contract with the State or county to which you are providing in-kind electricity; and
- Your contract must provide that you will use the wholesale value of the electricity for the area where your lease is located; and
- The maximum credit allowed under this section is equal to the portion of the royalty revenue that MMS would have paid to the State or county.
- The electricity the State or county government receives from you satisfies the payment obligation to the State or county. (30 CFR 218.306)



Advanced Royalties for Cessation of Production

If you pay advanced royalties under 43 CFR 3212.15(a)(1) to retain your lease:

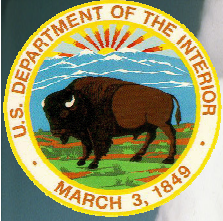
- (a) You must pay an advanced royalty monthly equal to the average monthly royalty you paid for the last 3 years the lease was producing. If your lease has been producing for less than 3 years, then use the average monthly royalty payment for the entire period your lease has been producing continuously;
- (b) The MMS must receive your advanced royalty payment before the end of each full calendar month in which no production occurs;
- (c) You may credit any advanced royalty you pay against production royalties you owe after your lease resumes production. You may not reduce the amount of any production royalty paid for any year below zero. (30 CFR 218.305)



Production Incentives and Allowable Deductions- Electrical Generation

The new rule:

- Provides for a 50 percent reduction in royalty, for four years, on any new production or qualified expansion projects for current lessees that do not modify their lease terms to the new royalty terms. New or expanded production must begin by August 7, 2011. (30 CFR 218.307)
- BLM determines eligibility for these incentives. See 43 CFR 3212.19



Revenue Impacts of EPO Act and the New Geothermal Regulations

The EPO Act changed the geothermal royalty revenue distribution to:

- 50 percent to states
 - 25 percent to counties
 - 25 percent to the Federal government
- Approximately \$4.1 million of geothermal royalty revenues were shifted from the Federal government to the counties.



II . Exploration, Development, and Utilization

A. Exploration Operations (43 CFR 3250)

1) Defined at 43 CFR 3200.1

- Any Activity
- Physically present on the land
- May cause damage to those lands
- Includes:
 - Geophysical Operations
 - Temperature Gradient Holes
 - Drilling of Shot-holes
 - Core-Drilling
 - Construction of Roads & Trails
 - Cross-Country Transit
- Does not include:
 - Direct testing of geothermal resource
 - Drilling of production or injection wells

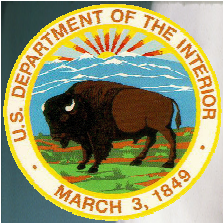


II . Exploration, Development, and Utilization

A. Exploration Operations (Cont.)

2) General

- Regulations apply:
 - On BLM lands, leased or not
 - On other Federal surface where BLM has leased
- Regulations do not apply:
 - Unleased lands managed by another Federal Agency
 - Unleased geothermal managed by another Agency
- Can propose operations on any BLM lands open to leasing, even if leased by another party
- If already leased, cannot unreasonably interfere with or endanger those other lessee's operations



II . Exploration, Development, and Utilization

A. Exploration Operations (Cont.)

2) Notice of Intent

- Form 3200-9, Complete & Signed
- Other than TGW:
 - Include accurate description
 - Include starting & ending dates
- For TGW:
 - 12 items required [43 CFR 3251.11(c)]
- Evidence of Bond Coverage
- Estimate of surface disturbance
- Measures to protect the environment
- Reclamation methods
- Other information BLM may require



II . Exploration, Development, and Utilization

A. Exploration Operations (Cont.)

3) Exploration Bonding

- Necessary prior to surface disturbance
- Amounts:
 - \$5,000 single operation
 - \$25,000 for all operations in a single state
 - \$50,000 for all operations nationwide
- Released:
 - After request (not automatic)
 - All wells P&A'd
 - Surface reclaimed



II . Exploration, Development, and Utilization

A. Exploration Operations (Cont.)

4) Abandonment

- When no longer necessary
- When BLM requires it
- File NOI on Sundry Notice
- Do not start work until approved

5) Reports

- Your lease, submit all data
- Unleased acreage or other parties lease, not required to submit unless for DEE
- Signed NOC 30 days after operations conducted

6) Confidential Information

- Held confidential per FOIA provisions
- Details at 43 CFR Part 2





II . Exploration, Development, and Utilization

B. Drilling Operations (43 CFR 3160)

- 1) How do I permit a well?
 - Geothermal Drilling Permit (Form 3260-2) Complete & Signed
 - Operations Plan - describes the drilling pad, access roads and facilities related to drilling and testing and includes measures for environmental protection and mitigation
 - Drilling Program – describes the technical and operational aspects of drilling, completing and testing
 - Acceptable Bond
 - Do not start operations until after BLM approves permit



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

2) Operations Plan – 9 items describes how you will drill & test geothermal resources on your lease:

- Well pad layout
- Existing & planned access roads
- Ancillary facilities
- Source of building material
- Water source
- Surface ownership
- Procedures to protect the environment
- Plans for reclamation
- Any other information BLM requires



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

- 3) Drilling program – 14 items describes the operational aspects
- Description of equipment, materials & procedures
 - Proposed depth
 - Any directional specifics, including plan & vertical section
 - Casing & Cementing program
 - Circulation media (drilling fluids)
 - Log description
 - BOPE
 - Fresh water zones
 - Anticipated reservoir T & P
 - Anticipated Temp Gradient
 - Survey Plat
 - Any other information the BLM requires



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

4) Miscellaneous

- Your drilling permit, drilling program and operations program can be submitted all-together
- If Operations Plan submitted separately
 - Must be prior to submittal of drilling permit & program
 - Submit a sundry notice for well pad construction
- Operations plan and drilling program can cover several wells, but your drilling permit is well specific
- Subsequent changes to drilling plan via sundry notice (oral approval option)



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

4) Drilling Operations Bonding

- Necessary prior to surface disturbance
- Amounts:
 - \$10,000 single lease
 - \$50,000 for all operations in a single state
 - \$150,000 for all operations nationwide
- Released:
 - After request (not automatic)
 - All wells P&A'd
 - Surface reclaimed



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

5) Plugging and Abandonment

- Do not start work until approved
- Must notify local BLM prior
- File NOI on Sundry Notice
 - If not previously submitted, include all well completion data
 - Address all 6 items required (43 CFR 3263.11)
- BLM may grant oral approval, but you must submit required info within 48 hrs.
- Restore the surface
- BLM may require abandonment
 - No longer needed
 - Not mechanically sound



II . Exploration, Development, and Utilization

B. Drilling Operations (Cont.)

5) Reports (43 CFR 3264)

- Newly completed wells
 - Completion Report (Form 3260-4)
 - 30 days after completion
 - 4 specific data items
- Subsequent Workovers
 - Subsequent Report
 - 30 Days following activity
 - 5 specific data items
 - BLM may waive this for routine operations

6) Confidential Information (43 CFR 3266)

- Held confidential per FOIA provisions
- Details at 43 CFR Part 2
- Items not held confidential:
 - Surface location
 - Surface elevation
 - Well status



II . Exploration, Development, and Utilization

C. Utilization Permits (43 CFR 3270)

- 1) How do I get a permit to produce geothermal power ?
 - Site License & Construction Permit
 - Sundry Notice fully describing plans
 - Submit a bond
 - Don't initiate activity prior to BLM approval
 - Utilization Plan & Facility Construction Permit
 - Prior to constructing pipelines and well field facilities
 - Commercial use permit prior to initiating commercial operations



II . Exploration, Development, and Utilization

C. Utilization Permits (Cont.)

- 2) Utilization Plan – 11 items describing the Facility (43 CFR 3272.11)
 - Proposed structures and facilities
 - Description of facility operations
 - Contour Map
 - Site preparation & surface disturbance
 - Source, quality and consumption rate of water
 - Methods to meet air quality standards
 - Number of personnel
 - Construction schedule
 - Schedule for testing
 - Measures to minimize visual impacts
 - Any additional info BLM requires
 - Environmental protection measures:
 - Controlling fires
 - Soil erosion
 - Surface or ground water
 - Fish and wildlife
 - Cultural, visual and other natural resources
 - Air & noise pollution
 - Public health & safety

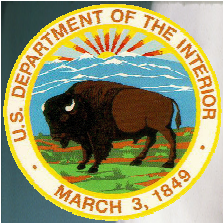


II . Exploration, Development, and Utilization

C. Utilization Permits (Cont.)

3) Site Licenses

- When not required:
 - On private land or split-estate, where BLM is not the surface owner
 - On Federal Lands not leased for geothermal resources
- Reasonably compact
- Filing Fee & Annual rental
 - No rental if sited on your own lease
- Bonding required - \$100,000
- Reclamation requirements



II . Exploration, Development, and Utilization

C. Utilization Permits (Cont.)

4) Commercial Use Permits

- Submit via sundry notice – 9 items describing resource involved and production handling
- Design specs - calibration of meters
- Schematic diagram of the site & wells – indicate location of meters
- Copy of sales contract
- Description of geothermal reservoir – including temp, pressure & flow rate or all wells
- Schematic diagram of each production & injection well
- Schematic flow diagram of the utilization facility in sufficient detail
- Planned safety provisions
- Environmental & operational parameters monitored during operations
- Any Add'l info BLM requires



II . Exploration, Development, and Utilization

C. Utilization and Site Licenses (Cont.)

5) Utilization Reports

- Well Operations (43 CFR 3276.11)
 - 11 items required
- Facility Operations (43 CFR 3276.12)
 - 9 items for all electrical generation facilities
 - Additional 4 items if Federal Royalty based on sale to a utility.
- Due the end of the month following the production month

6) Confidential Info

- Held confidential per FOIA provisions
- Details at 43 CFR Part 2
- Info not held confidential:
 - Facility location
 - Generating capacity
 - To whom selling electricity

Any Questions?

Unit and Communitization Agreements

- ▶ Majority interest of owners of any single lease has the authority to commit to unit.
- ▶ Secretary of Interior may initiate formation or require Federal lease to commit.
- ▶ Leases with different royalty rates will not be required to be modified in the same unit.